Klamath County Reroute
Attachment A. Comparison of Resources Affected

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Attachment A. Comparison of Resources Affected

1 Introduction

The purpose of this report is to address 3.69 mile Klamath County Reroute associated with the Ruby Pipeline Project (Project) on Bureau of Land Management (BLM) land and Bureau of Reclamation (Reclamation) land in Klamath County, Oregon. In this case the impact analysis is based on a 300-foot wide corridor and is compared to a 300-foot wide segment of the previous 3.23 mile route alignment. The area of analysis for the previous route is approximately 119 acres and the reroute is approximately 136 acres, see Figure 1. For the proposed reroute, the BLM manages 115.32 acres and Reclamation manages 20.64 acres. The tables and narrative below summarize those route realignments that occur on BLM and Reclamation managed lands.

2 Cultural Resources

Following approval of the Project route through [redacted] as part of the Right-of-Way Grant issued by the BLM on July 12, 2010, Ruby was advised by Klamath Tribal Officials, with support from the BLM staff, that cultural resources with very high cultural and archaeological values would be affected by the routing at this location. Based upon these discussions, additional review of the site was conducted, confirming that the site has qualities of much greater significance than was reflected in earlier assessment. As a result, Ruby field staff and archaeologists from Environmental Planning Group, with advice from the Klamath Tribes and BLM, conducted site reviews to identify alternate routes. While no route through this cultural resource rich region was identified that was constructible for a large diameter, high pressure pipeline that would completely avoid cultural resources, the Klamath County Reroute was developed to significantly reduce effects upon the important Site.

The level and intensity of cultural resources survey along the Klamath County Reroute was much higher than that conducted in the survey of the BLM Approved Route. In addition, cultural resources survey along the Klamath County Reroute used a different approach with more detailed methods and techniques. In addition, archaeological sites found along the Klamath County Reroute have now been evaluated for significance and, as a consequence, there is a good understanding of the characteristics and importance of each site. In contrast, archaeological sites found along the BLM Approved Route have not been evaluated. Consequently there is not a comparable level of understanding of the characteristics and importance of sites found along the two pipeline routes. Because of the differences in the cultural resource survey and evaluation programs conducted on the two routes, it is inappropriate to use a direct comparison of numbers of sites and site characteristics in order to understand the effects of the Klamath County Reroute in comparison with the BLM Approved Route.

In general, however, it is clear that the Klamath County Reroute avoids effects to the most culturally and archaeologically important site found in Oregon during the survey of the BLM Approved Route. In contrast, the Klamath County Reroute affected sites are simpler and possess less archaeological information. Although all the sites found on both the BLM Approved Route and on the Klamath County Reroute are culturally important with spiritual values ascribed to them by The Klamath Tribes, the Approved Route contains a unique concentration of sites with culturally important characteristics. By selecting the Klamath County Reroute, Ruby and the BLM will be able to preserve the sites with these important values, and reduce the overall effects of pipeline construction through this area.

3 Water Resources

Previous alignment and realignment conditions on potential water resource impacts within the Klamath County Reroute are addressed in this section.

3.1 Wetlands

The previous route alignment would have impacted two wetlands on Reclamation land that were 0.06 acres and 0.01 acres. The proposed reroute will not impact wetlands on Reclamation land within the 300-foot study corridor.

3.2 Streams

The previous route alignment would have impacted three streams on Reclamation land: one ephemeral, one interm ittent, and one perennial stream . The proposed reroute will cross one perennial stream and one ditch/canal within the 300-foot study corridor on BLM land. These streams are fish bearing and include sensitive fish species. Data is based on a 300-foot study corridor, however actual impacts from construction are limited to a maximum of 195-feet and stream crossings are necked down to minimize impacts. Table A-5.1 summarizes the potential impacts to streams by the proposed Klamath County Reroute.

3.3 Springs and Seeps

There are no springs and seeps that would be impacted within the 300-foot study corridor for either route.

Table A-5.1 Streams Potentially Impacted by Klamath County Reroute

Route	Stream Name	Flow Type	Stream Type	Length in Study Corridor (ft)	Fish Present	Sensitive Fish
Previous Un	named Tributary to the East Branch of Lost River	Ephemeral	Stream	437.0	No	
	Lost River	Intermittent	Stream	315.8	Yes	Lost River Sucker, Shortnose Sucker
	East Branch of Lost River Pere	nnial	Stream	480.1	Yes	Lost River Sucker, Shortnose Sucker
Reroute	East Branch of Lost River Pere	nnial	Ditch/Canal	257.1	Yes	Lost River Sucker, Shortnose Sucker
	East Branch of Lost River Pere	nnial	Stream	285.7	Yes	Lost River Sucker, Shortnose Sucker

4 Soils Resources

Existing con ditions and p otential soil im pacts within the Klamath Count y Re route in Klamath County are addressed in this section. The Reroute crosses similar soil units as the proposed route. Please refer to Table A-5.2 for a summary of the impacts.

Table A-5.2 Soils Characteristics, based on 300-foot corridor

Route	Acres	Managing Agency N	ame	Texture	Drainage
Previous	73.30	BLM	Lorella-Deven-Bieber-Adinot (s542)	Sandy loam	Moderately well drained
	24.54	Reclamation	Lorella-Deven-Bieber-Adinot (s542)	Sandy loam	Moderately well drained
	21.31	Reclamation	Stukel-Salisbury-Lorella-Fiddler-Dehlinger-Capona (s6355)	Loam	Well drained

Table A-5.2 Soils Characteristics, based on 300-foot corridor

Route	Acres	Managing Agency	Name	Texture	Drainage
Reroute	115.42	BLM	Lorella-Deven-Bieber-Adinot (s542)	Sandy loam	Moderately well drained
	0.05	BLM	Stukel-Salisbury-Lorella-Fiddler-Dehlinger-Capona (s6355)	Loam	Well drained
	0.12	Reclamation	Lorella-Deven-Bieber-Adinot (s542)	Sandy loam	Moderately well drained
	20.55	Reclamation	Stukel-Salisbury-Lorella-Fiddler-Dehlinger-Capona (s6355)	Loam	Well drained

5 Fish, Wildlife, and Vegetation

5.1 Fish

Based on field surveys in 2010, the proposed reroute could potentially impact two fish-bearing streams on BLM land, the East Branch of the Lost River and an irrigation ditch/canal that diverts water from the East Branch just south of Milepost 661.2R. Fish associated with these waterbodies are the Lost River sucker and the shortnose sucker.

Mitigation measures to minimize impacts to fish species have been adequately addressed in the FEIS and the Plan of Development (POD).

5.2 Wildlife

5.2.1 Big Game

Big game resources potentially impacted by the Project are adequately discussed in the FEIS. The proposed reroute could have potential impacts on designated big game winter and crucial winter habitats. The previous and proposed alignment crosses mule deer crucial winter habitat on BLM and Reclamation managed lands. Please refer to Table A-5.3 for a summary of the impacts.

Table A-5.3 Big Game Habitat Potentially Impacted by Klamath County Reroute

Big Game Habitat	Managing Agency	Previous Route (acres)	Reroute (acres)	Route Difference (acres)
Mule Deer	BLM 7	3.20	115.32	+42.12
Mule Deer	Reclamation 4	5.81	20.64	-25.17

5.2.2 Pygmy Rabbits

The Reroute is not located within designated habitat for pygmy rabbits. The Klamath County Reroute would not affect known pygmy rabbit populations.

5.2.3 Greater Sage-Grouse

The Reroute is not located within designated greater sage-grouse habitats. The Klamath County Reroute would not affect known greater sage-grouse populations.

5.2.4 Raptors

The impacts of the Project on raptors are adequately discussed in the FEIS. Surveys and monitoring for raptors have been completed for 2010. There is no presence of raptor nests or raptor nest buffers along the FEIS route as well as the Klamath County. There is one Bald eagle nest southwest of the Reroute; however its mile buffer does not cross the Reroute. No raptors will be affected by construction activities.

5.3 Vegetation

Potential changes to vegetation impacts as well as noxious weeds due to the reroute are addressed in this section.

5.3.1 Habitat Types

The Project traverses nine vegetation cover types: sagebrush steppe, salt desert scrub, juniper woodland, mix conifer forest, mixed forest, riparian, grasslands, mountain meadow and barren/developed (pasture). For a complete description of vegetation cover types please refer to Table 4.4.1-1, Upland Vegetation Communities Occurring along the Ruby Pipeline Project in the FEIS for the Ruby Pipeline Project (FERC 2010). Wetland vegetation crossed by the Project is discussed in section 3.1.

Ruby will minimize vegetation impacts during and after construction activities, as detailed in Ruby's Upland Erosion Control, Re-vegetation, and Maintenance Plan, Ruby's Wetland and Waterbody Construction Procedures, and Ruby's Restoration Revegetation Plans (see FEIS Appendices F and L, or the POD Appendices, D, F, and E.).

Table A-5.4 summarizes and compares the habitat type between the previous route and the proposed Klamath County Reroute.

Table A-5.4 Habitat Types Crossed by the Klamath County Reroute

Habitat Type	Managing Agency	Habitat Type	Miles crossed	Acreage crossed
Previous Route	Reclamation B	arren/Developed	0.01	1.0
	Reclamation Sage	brush Steppe	0.13	5.21
	BLM Sage	brush Steppe	1.83	67.88
	Reclamation Salt	Desert Scrub	1.11	39.59
	BLM Salt	Desert Scrub	0.16	5.33
Reroute	Reclamation B	arren/Developed	0.04	1.44
	BLM Sage	brush Steppe	2.63	96.11
	BLM Juni	per woodland		0.20
	Reclamation Salt	Desert Scrub	0.51	19.20
	BLM Sal	t Desert Scrub	0.44	15.93

5.3.2 Noxious Weeds

Potential impacts due to the presence of noxious weeds have been thoroughly discussed in the FEIS, section 4.4.6. Ruby would implement a number of measures designed to prevent the establishment of new noxious weed populations and to control the spread of existing populations. Noxious weed control measures are described in detail in Ruby's Noxious and Invasive Weed Control Plan (POD Appendix H) and are further discussed in the FEIS.

Within the proposed Klamath County Reroute there are 36 infestations of noxious weeds, 31 are on BLM land and 5 are on Reclamation land. Along the FEIS route there were 36 infestations of noxious weeds; 29 of the infestations were on BLM land and 7 infestations were on Reclamation land. The entire re-alignment is laden with *Taeniatherum caput-medusae*, medusahead rye. The coverage is about 5% per each infestation documented along the corridor. Each infestation has a 300' or larger diameter.